4. Introduction to Aviation: CTAN alignment with the Tech Prep Air Transportation Pathway in the Career Field Technical Content Standards of the Ohio Department of Education. **(ODE Course 177013)**

Semester Credit Hours: 3

Course Description: An overview of the history, development, and evolution of aeronautics and aviation. Course also explains the national aviation system in the United States, describes different sectors of the aviation industry, and explores various opportunities and career paths in aviation.

Advising Notes: None

Learning Outcomes **The student will be able to:**	**Outcomes and/or Competencies in ODE's REVISED Career Field Technical Content Standards**
1. Demonstrate basic knowledge of the history, development, and evolution of aviation	• 7.1.0. Describe the airspace system and aviation industry. • 7.1.1. Describe aviation technology from its inception to the current industry, including future trends. • 7.1.2 Describe contributions and barriers to the development of aviation. • 7.1.6. Describe the major FAA categories of aircraft
2. Demonstrate basic knowledge of different sectors of the air transportation industry	• 7.1.1. Describe aviation technology from its inception to the current industry, including future trends. • 7.1.3 Describe social and economic impacts that contribute to the movement of people and goods. • 7.1.5 Describe the role and function of the Federal Aviation Administration (FAA) • 7.1.6. Describe the major FAA categories of aircraft • 7.1.7 Describe the function of the fixed base operator (FBO) and its role in general aviation. • 7.1.8. Differentiate between general aviation from commercial aviation. • 7.1.9. Describe classes of airspace and associated requirements and limitations.

3. Demonstrate basic knowledge of the airport environment in the United States.	• 7.5.0 Airport Environments: Identify airport environments. • 7.5.1 Identify the different types of controlled and uncontrolled airports within the United States. • 7.5.2 Differentiate between towered and non-towered airports.
4. Demonstrate basic knowledge of the NAS and the air traffic control system in the United States.	7.8.1 Describe the extent of human factors in aircraft accidents. 7.8.8 Describe the impact of cockpit automation on human error. 7.8.9 Describe the role of the National Transportation Safety Board (NTSB) in accident investigations.
5. Demonstrate basic knowledge of aviation industry career specialties, opportunities, and trade/professional organizations.	1.1.2. Identify the scope of career opportunities and the requirements for education, training, certification, licensure, and experience. 1.1.4. Describe the role and function of professional organizations, industry associations, and organized labor and use networking techniques to develop and maintain professional relationships. 1.3.1. Analyze how regulatory compliance affects business operations and organizational performance. 7.10.1 Describe pilot qualifications.
6. Demonstrate basic knowledge of the manufacturing and maintenance industries for military, commercial, and general aviation aircraft.	1.1.4. Describe the role and function of professional organizations, industry associations, and organized labor and use networking techniques to develop and maintain professional relationships.
7. Demonstrate basic knowledge of aerodynamics and the forces of flight. **New learning outcome being surveyed.**	7.4.0 Aerodynamics: Describe and define aerodynamics based on scientific concepts. 7.4.1 Compare and contrast aeronautics and aerodynamics. 7.4.2 Describe the forces of flight and the three axes of motion. 7.4.3 Define Newton's Laws of Motion and Bernoulli's Principle. 7.4.4 Identify the parts of an airfoil and describe how an airfoil works. 7.4.5 Describe how airplance configuration affects performance. 7.4.6 Discuss the role of thrust and the relationship between lift and drag. 7.4.7 Describe lateral and directional stability and the parts of the aircraft that control the aircraft. 7.4.9 Describe the effects of loading, weight and balance on center of gravity and aircraft performance.

	7.4.10 Describe the design and power features that affect aircraft stability, performance and limitations. 7.10.0 Preflight Prepartation: Describe the necessary actions prior to engaging in flight. 7.10.2 Explain airworthiness requirements.